CENTERS FOR DISEASE CONTROL

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International Notes

Brazilian Purpuric Fever: *Haemophilus aegyptius* Bacteremia Complicating Purulent Conjunctivitis

Brazilian purpuric fever (BPF) was first recognized in late 1984 in the town of Promissao, São Paulo State, Brazil (*1*). The disease was characterized by the acute onset of high fever, vomiting, and abdominal pain, followed by purpura, vascular collapse, and death in children 3 months to 8 years of age. There was no evidence of meningitis, and blood cultures were negative when obtained, although some patients may have received antibiotics. *Haemophilus aegyptius* (*Haemophilus influenzae*, biotype III) was isolated from a nonaseptically obtained skin scraping of a petechia from an affected child.

Although the etiology could not be determined at the time of the outbreak, an epidemiologic investigation indicated disease was associated with preceding purulent conjunctivitis. *H. aegyptius* was the most commonly isolated organism from children with purulent conjunctivitis in Promissao; however, conjunctival cultures had not been obtained from children who subsequently developed BPF. Surveillance for BPF also identified other cases, including an outbreak of 17 cases that had occurred in 1984 in a town in the neighboring state of Paraná. In addition, 12 sporadic cases in early 1985 and a cluster of eight cases in February 1986 all occurred in towns in São Paulo State.

In March 1986, an outbreak of purulent conjunctivitis occurred in Serrana, São Paulo State. Because of surveillance established for BPF and the development of protocols for collecting specimens, blood cultures were obtained from children in Serrana with fever and concomitant or recent histories of conjunctivitis and from those with clinical presentations consistent with BPF.

Ten children, 20 months to 6 years of age, had blood (eight) or cerebrospinal fluid (CSF) (two) cultures positive for *H. aegyptius*. However, none had evidence of meningitis, and there was evidence that the two culture-positive CSF specimens may have been contaminated with blood. All had fever; only five had petechiae and/or purpura. Four of the 10 died. Five of the 10 fit the previously established case definition of BPF (*1*), and nine had recent histories of conjunctivitis. The majority had received antibiotic eye drops for treatment of conjunctivitis.

Purpuric Fever – Continued

Among the 10 culture-confirmed cases and an additional case that fit the BPF case definition, patients who received intravenous antibiotics (generally ampicillin with or without chloramphenicol) before the development of petechiae or purpura (five of six) were more likely to survive than those who did not (one of five). Four additional patients with BPF and blood cultures positive for *H. aegyptius* were reported from four other towns in São Paulo State between March and June 1986.

Based on these findings, the case definition of BPF has been revised:

A. A febrile illness in a child with isolation of *H. aegyptius* from a normally sterile body site (e.g., blood, CSF).

OR

B. 1. An acute illness in a child aged 3 months to 10 years characterized by:
   a. Fever of 38.5 C (101.3 F) or higher.
   b. Abdominal pain and/or vomiting.
   c. Development of petechiae and/or purpura.
   d. No evidence of meningitis.
   2. History of conjunctivitis within the 30 days preceding the onset of fever.
   3. At least one of the following two tests negative for *Neisseria meningitidis:*
      a. Blood cultures taken before antibiotic administration.
      b. Serum or urine antigen detection.
   4. Other laboratory data if obtained:
      a. CSF containing 100 or fewer leukocytes per mm^3 and negative culture or antigen detection for pathogenic bacteria other than *H. aegyptius.*
      b. Blood cultures taken before antibiotic administration negative for known pathogenic bacteria other than *H. aegyptius.*
      c. Serologic studies, if obtained, negative for known pathogens other than *H. aegyptius.*

Reported by Brazilian Purpuric Fever Task Force, São Paulo, Brazil, and Atlanta, Georgia.

Editorial Note: BPF is a serious systemic illness that accumulating evidence suggests is due to invasive *H. aegyptius* disease. The illness characteristically begins with purulent conjunctivitis caused by *H. aegyptius* and progresses in a small percentage of patients to fever and other systemic manifestations due to disseminated *H. aegyptius* infection. If untreated, some patients may develop petechiae and purpura and die from overwhelming endotoxemia and shock. The clinical presentation of BPF is similar to meningococcemia.

The observation that the majority of patients had initially received local antibiotic therapy for treatment of conjunctivitis suggests that topical treatment of conjunctivitis may be inadequate in preventing BPF. However, use of systemic antibiotics to treat BPF before development of hemorrhagic skin lesions may be effective in preventing progression of the disease and reducing the case-fatality rate.

It is unknown whether BPF occurs in areas other than southern Brazil. In many areas, blood cultures may not be drawn if cases are treated empirically for presumed meningococcemia. However, the occurrence of clusters in areas separated by 250 miles suggests the potential for spread.

Questions about BPF or reports of similar illnesses should be directed to the Meningitis and Special Pathogens Branch, Division of Bacterial Diseases, Center for Infectious Diseases, CDC; telephone (404) 329-3687.

Reference

1. CDC. Preliminary report: epidemic fatal purpuric fever among children—Brazil. MMWR 1985;34: 217-9.

Epidemiologic Notes and Reports

Rabies in a Javelina — Arizona

On March 1, 1986, a 47-year-old woman and her husband were hunting javelina (collared peccary, *Pecari angulatus*, a pig-like mammal) near the Superstition Mountains, east of Phoenix, Arizona. The woman saw a javelina "chasing its tail"; she was subsequently attacked and bitten by the animal on her left upper thigh. Her husband shot the animal to dislodge it from her thigh. The bite resulted in a jagged 3½ inch wound, and the woman was treated at a local hospital. The animal was diagnosed as rabid by the direct immunofluorescent antibody test on a brain specimen, from which rabies virus was also isolated. The woman received rabies postexposure prophylaxis.

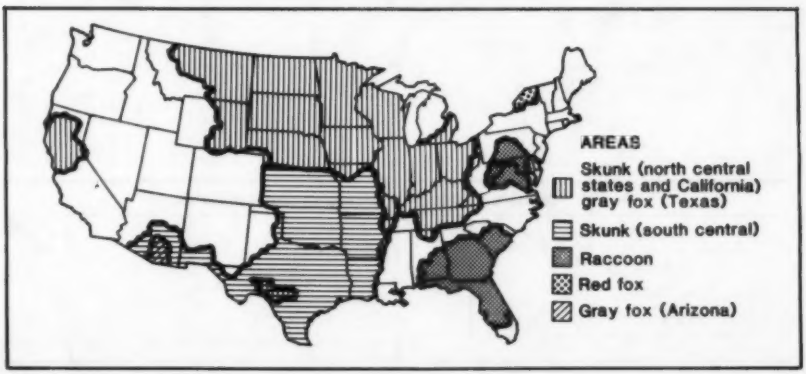
Reported by M Hetrick, H Goodman, MD, Gila County Dept of Health, M Wright, D Woodall, R Cheshire, J Doll, PhD, SJ Englender, MD, LF Novick, MD, C Levy, GG Caldwell, MD, State Epidemiologist, Arizona Dept of Health Svcs; Viral and Rickettsial Zoonoses Br, Div of Viral Diseases, Center for Infectious Diseases, CDC.

Editorial Note: This is the first report of rabies in a javelina. Bites by javelina are most likely to occur while the animals are being sought as game. Javelina are found south of 35 N latitude in parts of Arizona, New Mexico, and Texas, most of Central America except for central Mexico, and south to Colombia.

Almost all wildlife rabies in the United States occurs among skunk, raccoon, bat, and fox species (in decreasing frequency of reported cases); however, the disease is occasionally found in an unexpected host. The origin of rabies in these animals can be investigated by typing the virus with a panel of monoclonal antibodies (mabs) to nucleocapsid proteins (*1*).

On the basis of nucleocapsid reactivity with a panel of mabs, five antigenically distinct groups of rabies viruses can be formed from isolates collected from the major terrestrial wildlife rabies enzootic areas of the United States (Figure 1). These five antigenically distinct groups comprise isolates collected from: (1) skunk rabies areas of California and the north central United States and gray fox rabies areas of central Texas; (2) skunk rabies areas of the south central United States; (3) raccoon rabies areas of the mid-Atlantic and southeastern

FIGURE 1. Distribution of five antigenically distinct rabies virus strains and the predominant wildlife species affected — contigous United States



Rabies — Continued

United States; (4) red fox rabies areas of the northeast United States; and (5) gray fox rabies areas of Arizona.

There are two separate enzootic hosts for rabies in Arizona, the striped skunk and the gray fox. Virus isolates from these two species can easily be distinguished with mabs. Rabies virus from the javelina was identical to that found in rabid gray foxes in Arizona, suggesting that the infection in the javelina was the result of spillover from enzootic disease in foxes. The reaction pattern found in virus isolates from foxes in Arizona is unique among over 300 rabies isolates collected from terrestrial mammals elsewhere in the United States. Moreover, the virus strains in foxes and skunks in Arizona are different from each other, even when infected animals of both species are found in the same area. Fox virus isolates from Texas also differ in their reactivity pattern from skunks in Texas, even when isolates from both species are collected in the same county. This observation is unique to Arizona and Texas.

Rabies laboratories are encouraged to submit for monoclonal antibody typing brain specimens from rabies cases that occur unexpectedly in a new species or area. Such specimens should be submitted through state health departments to CDC.

(Continued on page 561)

TABLE I. Summary—cases specified notifiable diseases, United States

Disease	35th Week Ending			Cumulative, 35th Week Ending		
	Aug. 30, 1986	Aug. 31, 1985	Median 1981-1985	Aug. 30, 1986	Aug. 31, 1985	Median 1981-1985
Acquired Immunodeficiency Syndrome (AIDS)	252	184	N	8,357	5,139	N
Aseptic meningitis	353	357	371	5,505	4,998	4,998
Encephalitis: Primary (arthropod-borne & unspec.)	21	31	60	648	727	811
Post-infectious	4	5	1	73	94	86
Gonorrhea: Civilian	13,345	17,013	18,329	578,443	585,934	597,452
Military	285	455	455	11,132	14,249	16,161
Hepatitis: Type A	308	486	420	14,349	14,581	14,581
Type B	424	548	472	17,246	17,033	15,879
Non A, Non B	50	69	N	2,388	2,753	N
Unspecified	47	91	103	3,043	3,806	4,765
Legionellosis	6	9	N	418	473	N
Leprosy	-	5	5	175	262	189
Malaria	23	16	16	667	678	678
Measles: Total*	57	56	10	5,249	2,388	2,244
Indigenous	53	34	N	5,009	1,901	N
Imported	4	22	N	240	397	N
Meningococcal infections: Total	25	20	34	1,780	1,696	2,003
Civilian	25	20	34	1,778	1,692	1,999
Military	-	-	-	2	6	9
Mumps	45	27	27	3,304	2,170	2,407
Pertussis	48	167	66	1,984	1,839	1,394
Rubella (German measles)	5	45	18	390	541	758
Syphilis (Primary & Secondary): Civilian	295	585	585	17,136	17,938	20,357
Military	2	1	6	112	119	250
Toxic Shock syndrome	4	5	N	238	263	N
Tuberculosis	377	511	449	14,469	14,257	15,598
Tularemia	5	4	10	94	119	168
Typhoid fever	4	3	6	184	226	270
Typhus fever, tick-borne (RMSF)	36	25	40	559	476	777
Rabies, animal	74	98	126	3,700	3,575	4,319

TABLE II. Notifiable diseases of low frequency, United States

	Cum 1986		Cum 1986
Anthrax	-	Leptospirosis (Tex. 1)	24
Botulism: Foodborne	6	Plague (Ariz. 1)	6
Infant (N.Mex. 1)	37	Poliomyelitis, Paralytic	-
Other	1	Psittacosis (Upstate N.Y. 1, Fla. 1)	71
Brucellosis (Ohio 1, N.C. 1)	53	Rabies, human	-
Cholera	-	Tetanus (Tex. 1)	44
Congenital rubella syndrome	2	Trichinosis	21
Congenital syphilis, ages < 1 year	107	Typhus fever, flea-borne (endemic, murine)	34
Diphtheria	-		

*Four of the 57 reported cases for this week were imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending August 30, 1986 and August 31, 1985 (35th Week)

Reporting Area	AIDS	Aseptic Menin-gitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionel-losis	Leprosy
			Primary	Post-in-fectious			A	B	NA,NB	Unspeci-fied		
	Cum 1986	1986	Cum 1986	Cum 1986	Cum 1986	Cum 1985	1986	1986	1986	1986	1986	Cum 1986
UNITED STATES	8,357	353	648	73	578,443	585,934	305	424	50	47	6	175
NEW ENGLAND	373	19	17	3	14,463	15,439	15	39	12	1	1	6
Maine	14	3	-	-	606	747	-	7	-	-	-	-
N H	9	-	2	-	378	396	-	-	-	-	-	-
Vt	3	1	2	2	167	209	2	-	1	-	-	-
Mass	203	-	4	-	5,757	5,947	7	19	9	1	1	6
R I	21	10	-	-	1,146	1,226	-	3	1	-	-	-
Conn	123	5	9	1	6,409	6,914	6	10	1	-	-	-
MID ATLANTIC	3,211	64	76	7	98,427	84,862	17	72	3	2	-	12
Upstate N Y	297	36	27	4	11,610	11,257	6	37	1	-	-	1
N Y City	2,202	-	15	-	56,870	42,583	-	-	-	-	-	10
N J	495	15	10	-	12,954	12,799	7	20	1	2	-	-
Pa	217	13	23	3	16,993	18,223	4	15	1	-	-	1
E N CENTRAL	491	97	183	11	75,685	78,841	20	46	2	5	-	4
Ohio	96	34	58	3	19,568	20,109	4	19	-	1	-	-
Ind	50	24	42	3	8,060	8,497	-	7	-	2	-	-
Ill	242	3	38	4	21,182	20,706	11	2	-	2	-	3
Mich	78	36	35	1	24,107	21,887	5	18	2	-	-	1
Wis	25	U	10	-	2,768	7,642	U	U	U	U	U	-
W N CENTRAL	161	28	30	8	25,094	27,395	15	18	2	1	-	2
Minn	60	-	12	-	3,591	3,998	2	-	-	-	-	1
Iowa	11	3	9	-	2,575	2,902	2	3	-	-	-	-
Mo	56	9	1	-	12,533	13,170	5	8	1	-	-	-
N Dak	2	-	-	-	222	182	-	-	-	-	-	-
S Dak	1	7	7	-	516	509	3	1	-	-	-	-
Nebr	7	3	-	1	1,928	2,371	1	1	-	-	-	-
Kans	24	4	1	7	3,729	4,263	2	5	1	1	-	1
S ATLANTIC	1,191	54	84	26	152,419	151,333	50	73	7	3	5	2
Del	18	-	5	-	2,470	2,787	12	-	-	-	-	-
Md	122	13	25	1	18,033	19,439	1	6	-	-	-	-
D C	151	-	-	1	11,255	10,157	1	2	-	-	-	-
Va	110	5	27	1	12,341	12,721	1	6	-	-	-	1
W Va	6	5	13	-	1,495	1,712	-	4	1	-	-	-
N C	47	11	12	1	23,909	23,450	2	9	1	2	3	-
S C	28	1	-	-	13,118	14,311	-	20	-	-	1	-
Ga	170	5	-	1	25,547	30,623	4	15	2	-	1	-
Fla	539	14	2	21	44,251	36,133	29	11	3	1	-	1
E S CENTRAL	110	7	42	3	47,274	49,908	5	24	1	4	-	1
Ky	25	2	20	1	5,223	5,665	2	2	-	-	-	-
Tenn	53	3	3	1	18,297	18,976	3	8	1	1	-	-
Ala	20	2	18	1	13,504	15,496	-	14	-	2	-	1
Miss	12	-	1	-	10,250	9,771	-	-	-	1	-	-
W S CENTRAL	491	58	88	6	68,872	73,502	47	51	4	14	-	16
Ark	21	-	-	2	6,507	7,237	-	3	1	-	-	-
La	111	2	3	-	12,368	14,384	1	6	1	-	-	1
Okla	27	7	16	-	7,886	8,019	9	2	-	1	-	-
Tex	332	49	69	4	42,111	43,862	37	40	2	13	-	15
MOUNTAIN	206	19	23	1	17,282	18,358	82	57	11	12	-	11
Mont	4	-	-	1	482	505	1	1	1	1	-	-
Idaho	2	-	-	-	556	553	4	2	-	-	-	-
Wyo	4	-	2	-	375	431	-	-	-	-	-	-
Colo	96	8	4	-	4,528	5,442	1	4	-	2	-	3
N Mex	11	-	3	-	1,709	2,113	6	-	2	-	-	-
Ariz	52	11	8	-	5,602	5,341	59	41	6	9	-	5
Utah	13	-	5	-	733	829	7	-	1	-	-	1
Nev	24	-	1	-	3,297	3,144	4	9	1	-	-	2
PACIFIC	2,123	9	106	8	78,927	86,296	54	44	8	5	-	121
Wash	93	-	11	-	5,917	6,420	31	29	4	4	-	14
Oreg	47	-	-	-	3,371	4,264	23	10	4	1	-	-
Calif	1,938	U	92	8	68,897	72,411	U	U	U	U	U	84
Alaska	11	2	3	-	1,847	1,985	-	4	-	-	-	-
Hawaii	34	7	-	-	895	1,216	-	1	-	-	-	23
Guam	-	U	-	-	122	137	U	U	U	U	U	1
P R	76	2	4	-	1,539	2,262	-	4	-	-	-	7
V I	3	-	-	-	166	327	-	-	-	-	-	-
Pac. Trust Terr	-	-	-	-	295	655	1	-	-	-	-	33
Amer Samoa	-	U	-	-	30	-	U	U	U	U	U	2

N: Not notifiable U: Unavailable

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending August 30, 1986 and August 31, 1985 (35th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported *		Total									
	Cum. 1986	1986	Cum. 1986	1986	Cum. 1986	Cum. 1985	Cum. 1986	1986	Cum. 1986	1986	Cum. 1986	Cum. 1985	1986	Cum. 1986	Cum. 1985
UNITED STATES	667	53	5,009	4	240	2,388	1,780	45	3,304	48	1,984	1,839	5	390	541
NEW ENGLAND	38	-	77	-	8	124	125	-	52	-	113	93	-	9	12
Maine	1	-	10	-	-	1	23	-	-	-	2	5	-	-	-
N.H.	2	-	41	-	-	-	6	-	12	-	58	38	-	1	2
Vt.	1	-	-	-	-	-	15	-	3	-	3	3	-	1	-
Mass.	20	-	23	-	6	116	29	-	9	-	28	28	-	4	6
R.I.	5	-	2	-	-	-	17	-	9	-	4	12	-	2	-
Conn.	9	-	1	-	2	7	35	-	19	-	18	7	-	1	4
MID ATLANTIC	94	4	1,610	2	23	200	288	1	136	3	138	111	-	31	215
Upstate N.Y.	32	4	68	-	19	82	95	1	54	2	89	64	-	23	17
N.Y. City	25	-	615	-	2	63	57	-	5	-	3	11	-	5	173
N.J.	18	-	905	-	-	27	30	-	36	-	11	3	-	3	11
Pa.	19	-	22	2†	2	28	104	-	41	1	35	33	-	-	14
E.N. CENTRAL	44	2	970	-	16	515	243	33	2,251	10	259	389	2	37	28
Ohio	14	-	-	-	10	54	97	-	100	9	117	37	-	1	-
Ind.	2	-	17	-	-	57	20	-	31	-	22	98	-	-	1
Ill.	14	2	636	-	3	290	67	32	1,676	1	29	41	2	26	12
Mich.	13	-	56	-	-	55	53	1	249	-	24	30	-	8	14
Wis.	1	U	261	U	3	59	6	U	195	U	67	183	U	2	1
W.N. CENTRAL	23	-	322	-	17	11	98	3	85	17	190	117	-	10	19
Minn.	6	-	45	-	4	6	17	-	1	1	44	50	-	-	2
Iowa	1	-	133	-	1	-	11	3	24	-	13	5	-	1	1
Mo.	10	-	25	-	6	2	30	-	15	-	12	24	-	1	7
N. Dak.	-	-	25	-	1	2	-	-	3	-	4	9	-	1	2
S. Dak.	-	-	-	-	-	-	4	-	1	-	14	2	-	-	-
Nebr.	4	-	-	-	-	-	9	-	-	-	1	4	-	-	-
Kans.	2	-	94	-	5	1	15	-	41	16	92	23	-	7	7
S. ATLANTIC	87	34	539	-	53	287	325	4	158	3	591	384	-	10	60
Del.	1	-	1	-	-	-	2	-	-	-	222	-	-	-	1
Md.	12	3	25	-	9	94	44	-	15	-	136	231	-	-	6
D.C.	1	-	-	-	2	13	4	-	-	-	-	-	-	-	-
Va.	22	1	36	-	24	26	55	-	34	-	30	8	-	-	2
W. Va.	4	-	2	-	-	33	3	-	38	-	23	4	-	-	9
N.C.	4	-	2	-	1	9	56	-	14	-	41	17	-	-	-
S.C.	6	-	274	-	-	3	29	-	12	-	13	1	-	-	3
Ga.	8	-	79	-	14	8	50	1	15	-	102	76	-	-	-
Fla.	29	30	120	-	3	101	82	3	30	3	24	47	-	10	29
E.S. CENTRAL	16	1	57	-	8	7	99	-	25	-	42	30	-	4	2
Ky.	4	-	-	-	6	5	24	-	6	-	5	3	-	4	2
Tenn.	1	-	54	-	1	1	36	-	18	-	15	16	-	-	-
Ala.	7	1	1	-	1	-	28	-	2	-	22	7	-	-	-
Miss.	4	-	2	-	-	1	11	-	1	-	-	4	-	-	-
W.S. CENTRAL	71	11	596	2	36	423	155	1	152	4	189	264	2	57	32
Ark.	-	-	276	-	2	-	22	-	7	-	11	12	-	-	1
La.	14	-	4	-	-	42	22	-	2	-	11	10	-	-	-
Okla.	9	-	37	-	2	1	21	N	N	4	93	126	-	-	1
Tex.	48	11	279	2†	32	380	90	1	143	-	54	117	2	57	30
MOUNTAIN	26	1	297	-	26	529	89	3	206	10	199	140	1	22	5
Mont.	-	-	-	-	8	137	8	-	5	2	12	7	-	2	-
Idaho	1	-	1	-	-	137	3	-	6	-	33	8	-	-	1
Wyo.	-	-	-	-	-	-	2	-	-	3	4	-	1	1	-
Colo.	8	-	2	-	5	13	14	1	12	1	53	47	-	1	-
N. Mex.	4	-	32	-	7	6	8	N	N	2	19	11	-	-	2
Ariz.	8	-	252	-	6	236	19	1	168	1	47	27	-	2	1
Utah	2	1	9	-	-	-	9	-	10	1	28	40	-	13	-
Nev.	3	-	1	-	-	-	26	1	5	-	3	-	-	3	1
PACIFIC	288	-	541	-	53	292	372	-	239	1	293	311	-	210	178
Wash.	21	-	158	-	25	66	54	-	7	1	83	53	-	14	11
Oreg.	15	-	4	-	4	3	30	N	N	-	10	35	-	1	1
Calif.	231	U	358	U	22	203	275	U	209	U	190	182	U	191	117
Alaska	-	-	-	-	-	-	11	-	6	-	2	29	-	-	1
Hawaii	1	-	21	-	2	20	2	-	17	-	8	12	-	4	48
Guam	1	U	4	U	1	11	-	U	4	U	-	-	U	3	2
P.R.	4	-	33	-	-	50	2	3	26	-	13	10	-	60	25
V.I.	-	-	-	-	-	10	-	-	13	-	-	-	-	-	-
Pac. Trust Terr.	-	-	-	-	-	-	1	-	7	-	-	-	-	2	-
Amer. Samoa	-	U	2	U	-	-	-	U	4	U	-	-	U	1	-

*For measles only, imported cases includes both out-of-state and international importations.

N: Not notifiable U: Unavailable †International §Out-of-state

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending August 30, 1986 and August 31, 1985 (35th Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tularemia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum 1986	Cum 1985	1986	Cum 1986	Cum 1985	Cum 1986	Cum 1986	Cum 1986	Cum 1986
UNITED STATES	17,135	17,938	4	14,469	14,257	94	184	559	3,700
NEW ENGLAND	314	361	-	473	483	1	11	10	3
Maine	15	10	-	32	35	-	-	-	-
N H	10	9	-	19	16	-	-	1	-
Vt	7	5	-	13	4	-	-	-	-
Mass	165	181	-	247	287	1	9	3	-
R I	18	12	-	35	35	-	-	3	1
Conn	99	144	-	127	106	-	2	3	2
MID ATLANTIC	2,466	2,371	1	2,954	2,595	1	15	24	444
Upstate N Y	107	179	-	424	452	-	3	14	59
N Y City	1,419	1,466	-	1,536	1,257	-	6	5	-
N J	445	465	1	506	373	1	5	2	16
Pa	495	261	-	488	513	-	1	3	369
E N CENTRAL	677	727	1	1,749	1,749	-	13	60	92
Ohio	92	100	1	307	314	-	2	56	9
Ind	80	65	-	181	216	-	2	-	14
Ill	351	362	-	756	762	-	2	1	27
Mich	119	154	-	427	351	-	5	3	21
Wis	35	46	U	78	106	-	2	-	21
W N CENTRAL	148	155	1	424	385	29	8	39	588
Minn	27	32	-	104	79	-	1	1	82
Iowa	6	17	-	35	43	1	-	1	132
Mo	81	76	-	211	188	23	6	20	63
N Dak	3	2	-	6	6	-	-	1	132
S Dak	3	5	-	16	19	2	-	6	115
Nebr	11	7	-	7	13	1	-	4	22
Kans	17	16	1	45	37	2	1	6	42
S ATLANTIC	5,261	5,309	-	2,782	2,890	9	26	256	883
Del	36	26	-	27	27	-	1	1	-
Md	293	318	-	213	261	2	6	28	439
D C	208	240	-	94	109	1	2	-	26
Va	254	203	-	229	245	2	6	41	119
W Va	18	15	-	82	78	-	3	7	30
N C	339	457	-	372	368	1	4	90	7
S C	456	548	-	358	356	-	-	59	41
Ga	1,014	917	-	422	486	3	-	29	140
Fla	2,643	2,585	-	965	960	-	4	1	81
E S CENTRAL	1,170	1,378	-	1,254	1,249	8	2	66	241
Ky	54	43	-	298	292	3	-	17	64
Tenn	410	429	-	367	361	4	1	27	97
Ala	376	430	-	393	371	1	-	14	78
Miss	330	476	-	196	225	-	1	8	2
W S CENTRAL	3,457	4,064	-	1,870	1,769	41	15	95	538
Ark	165	212	-	246	196	30	-	4	123
La	595	706	-	320	264	1	1	-	15
Okla	94	123	-	175	177	6	1	76	47
Tex	2,603	3,023	-	1,129	1,132	4	13	15	353
MOUNTAIN	408	490	1	343	361	4	8	8	529
Mont	6	5	-	20	46	1	1	4	175
Idaho	10	4	-	16	15	-	-	-	4
Wyo	1	7	-	-	5	-	-	1	224
Colo	100	116	-	30	43	-	1	3	23
N Mex	52	95	-	69	66	1	-	-	6
Ariz	167	230	-	163	154	-	3	-	87
Utah	12	5	1	28	10	1	2	-	3
Nev	60	28	-	17	22	1	1	-	7
PACIFIC	3,234	3,083	-	2,640	2,776	1	86	1	382
Wash	99	80	-	128	159	-	3	-	5
Oreg	75	62	-	95	90	-	-	-	-
Calif	3,033	2,889	U	2,250	2,326	-	79	1	369
Alaska	2	2	-	37	71	1	1	-	8
Hawaii	25	50	-	130	130	-	3	-	-
Guam	1	2	U	34	31	-	-	-	-
P R	576	536	-	225	240	-	4	-	35
V I	-	1	-	1	1	-	-	-	-
Pac. Trust Terr.	170	92	-	44	44	-	42	-	-
Amer. Samoa	-	-	U	4	-	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending August 30, 1986 (35th Week)

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	586	381	115	32	15	23	39
Boston, Mass.	133	75	31	10	7	10	13
Bridgeport, Conn.	39	25	12	2	-	-	2
Cambridge, Mass.	31	23	5	3	-	-	3
Fall River, Mass.	31	28	2	1	-	-	-
Hartford, Conn.	59	37	11	4	3	4	1
Lowell, Mass.	18	13	4	1	-	-	1
Lynn, Mass.	14	10	3	1	-	-	1
New Bedford, Mass.	16	13	3	-	-	-	1
New Haven, Conn.	46	29	8	4	2	3	1
Providence, R.I.	44	34	7	1	1	1	4
Somerville, Mass.	4	3	1	-	-	-	-
Springfield, Mass.	46	27	11	3	1	4	7
Waterbury, Conn.	31	22	7	1	-	1	5
Worcester, Mass.	54	42	10	1	1	-	-
MID ATLANTIC	2,535	1,596	532	256	72	69	111
Albany, N.Y.	42	30	4	3	1	4	3
Allentown, Pa.	23	20	2	1	-	-	-
Buffalo, N.Y.	89	57	28	3	-	1	8
Camden, N.J.	31	17	7	3	4	-	1
Elizabeth, N.J.	29	19	6	3	1	-	-
Erie, Pa.†	52	38	12	3	-	1	1
Jersey City, N.J.	40	26	8	4	1	1	3
N.Y. City, N.Y.	1,293	800	252	177	38	26	49
Newark, N.J.	81	30	23	19	3	6	9
Paterson, N.J.	28	19	5	3	1	-	3
Philadelphia, Pa.	403	244	96	28	13	22	19
Pittsburgh, Pa.†	64	47	15	2	-	-	-
Reading, Pa.	26	19	4	2	-	1	1
Rochester, N.Y.	126	89	23	7	3	4	10
Schenectady, N.Y.	36	24	12	-	-	-	-
Scranton, Pa.†	20	12	7	-	1	-	1
Syracuse, N.Y.	84	53	19	4	5	3	-
Trenton, N.J.	28	21	6	1	-	-	1
Utica, N.Y.	22	19	1	2	-	-	-
Yonkers, N.Y.	18	14	2	1	1	-	2
E.N. CENTRAL	2,116	1,349	461	170	51	85	74
Akron, Ohio	48	37	6	3	-	2	-
Canton, Ohio	27	19	6	1	-	1	1
Chicago, Ill.§	564	362	125	45	10	22	16
Cincinnati, Ohio	96	67	14	6	7	2	9
Cleveland, Ohio	146	74	42	17	4	9	3
Columbus, Ohio	83	56	13	10	1	3	4
Dayton, Ohio	130	88	29	8	2	3	6
Detroit, Mich.	257	148	57	28	9	15	7
Evansville, Ind.	38	28	8	1	-	1	1
Fort Wayne, Ind.	59	36	16	5	2	-	2
Gary, Ind.	13	9	3	1	-	-	-
Grand Rapids, Mich.	55	32	11	5	1	6	6
Indianapolis, Ind.	170	99	49	10	6	6	2
Madison, Wis.	31	18	9	1	3	-	1
Milwaukee, Wis.	128	91	22	8	-	7	3
Peoria, Ill.	33	22	5	4	-	2	5
Rockford, Ill.	31	24	3	4	-	-	-
South Bend, Ind.	50	38	10	1	1	-	1
Toledo, Ohio	102	67	19	7	4	5	5
Youngstown, Ohio	55	34	14	5	1	1	2
W.N. CENTRAL	704	467	140	48	27	24	29
Des Moines, Iowa	60	45	9	3	-	3	2
Duluth, Minn.	23	19	4	-	-	-	-
Kansas City, Kans.	27	17	6	2	2	-	2
Kansas City, Mo.	93	57	19	9	6	2	1
Lincoln, Nebr.	36	24	6	3	2	1	3
Minneapolis, Minn.	109	69	25	5	3	7	8
Omaha, Nebr.	86	47	25	8	3	3	5
St. Louis, Mo.	145	96	28	6	8	7	4
St. Paul, Minn.	62	52	7	3	-	-	1
Wichita, Kans.	63	41	11	7	3	1	3
S. ATLANTIC	1,216	720	276	109	50	29	54
Atlanta, Ga.	128	71	34	14	9	-	7
Baltimore, Md.	265	143	53	22	11	6	4
Charlotte, N.C.	67	43	19	4	-	1	3
Jacksonville, Fla.	101	58	29	7	4	3	5
Miami, Fla.	99	54	21	14	6	4	3
Norfolk, Va.	57	28	21	4	2	2	5
Richmond, Va.	91	55	19	10	5	2	4
Savannah, Ga.	46	27	9	6	3	1	6
St. Petersburg, Fla.	92	83	5	2	1	1	5
Tampa, Fla.	74	48	16	3	3	3	9
Washington, D.C.	179	98	48	22	6	6	3
Wilmington, Del.	17	14	2	1	-	-	-
E.S. CENTRAL	697	480	130	56	25	26	30
Birmingham, Ala.	135	87	24	11	4	9	4
Chattanooga, Tenn.	49	30	12	6	1	-	3
Knoxville, Tenn.	73	42	15	5	7	4	3
Louisville, Ky.	99	71	16	9	-	3	2
Memphis, Tenn.	128	87	26	7	6	2	7
Mobile, Ala.	60	36	10	6	3	5	1
Montgomery, Ala.	36	28	6	-	-	2	2
Nashville, Tenn.	117	79	21	12	4	1	8
W.S. CENTRAL	1,262	740	290	120	68	43	43
Austin, Tex.	60	35	13	7	3	2	4
Baton Rouge, La.	52	36	11	2	3	-	-
Corpus Christi, Tex.	47	22	11	7	4	3	1
Dallas, Tex.	206	119	40	27	12	8	8
El Paso, Tex.	68	35	16	9	5	2	2
Fort Worth, Tex.	86	56	21	4	2	3	6
Houston, Tex.	243	121	66	32	17	7	3
Little Rock, Ark.	69	43	16	4	4	2	2
New Orleans, La.	110	60	30	9	6	5	-
San Antonio, Tex.	159	106	30	9	7	7	8
Shreveport, La.	71	43	16	6	2	4	4
Tulsa, Okla.	91	64	20	4	3	-	5
MOUNTAIN	615	409	116	43	40	7	28
Albuquerque, N.Mex.	76	51	11	4	9	1	3
Colo. Springs, Colo.	28	24	2	2	-	-	4
Denver, Colo.	125	88	27	6	3	1	5
Las Vegas, Nev.	83	49	20	10	5	-	6
Ogden, Utah	17	12	4	1	-	-	1
Phoenix, Ariz.	122	74	24	12	9	3	3
Pueblo, Colo.	34	22	7	1	4	-	1
Salt Lake City, Utah	46	26	10	4	5	1	-
Tucson, Ariz.	84	64	11	3	5	1	5
PACIFIC	1,569	999	302	155	60	50	84
Berkeley, Calif.	12	9	2	1	-	-	1
Fresno, Calif.	88	60	13	5	5	5	6
Glendale, Calif.	7	6	1	-	-	-	1
Honolulu, Hawaii	75	49	13	9	2	2	6
Long Beach, Calif.	87	61	18	3	4	1	7
Los Angeles, Calif.	326	202	58	43	18	5	12
Oakland, Calif.	52	37	7	6	-	2	2
Pasadena, Calif.	26	20	5	-	-	1	-
Portland, Oreg.	97	68	13	7	6	3	4
Sacramento, Calif.	140	86	24	18	6	5	17
San Diego, Calif.	144	84	31	10	9	8	9
San Francisco, Calif.	157	84	40	24	3	6	3
San Jose, Calif.	134	87	29	10	5	3	6
Seattle, Wash.	125	82	22	12	1	8	6
Spokane, Wash.	63	41	18	3	-	1	3
Tacoma, Wash.	36	23	8	4	1	-	1
TOTAL	11,280††	7,121	2,362	997	408	356	493

* Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

** Pneumonia and influenza.

† Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

†† Total includes unknown ages.

§ Data not available. Figures are estimates based on average of past 4 weeks.

Rabies – Continued

This case emphasizes the importance of assessing every mammal bite individually for the possibility of rabies. After the bite of a wild animal, the decision to administer postexposure rabies prophylaxis is based on the results of fluorescent antibody examination of the animal brain, the status of rabies activity in the area where the bite occurred, and the species of biting animal.

Reference

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Current Trends

Leading Work-Related Diseases and Injuries

The National Institute for Occupational Safety and Health (NIOSH) has developed a suggested list of 10 leading work-related diseases and injuries and has described the first eight categories on that list. A discussion of the ninth category, Dermatologic Conditions, appears below.*

DERMATOLOGIC CONDITIONS

Background. A worker's skin is directly exposed to the occupational environment and is susceptible to a large number of dermatologic injuries and other conditions (Table 1). Complete data on the extent and cost of dermatologic injuries are not available; however, dermatologic conditions other than injuries accounted for 37% of the 106,100 occupational illnesses recorded in 1983 in the Bureau of Labor Statistics (BLS) Annual Survey of Occupational Injuries and Illnesses† (*1*). Results from the BLS Annual Survey for 1972-1976§ indicated that 20%-25% of all occupational dermatologic conditions resulted in lost time from work (average 10-12 lost work days) (*2*). Similar data based on workers' compensation claims have been reported from California and South Carolina (*3,4*). Assuming that only 2%-10% of cases are actually reported, the annual cost of occupational dermatologic conditions resulting from lost worker productivity, medical care, and disability payments may range between $222 million and $1 billion (*5,6*).

*References to the previous articles are given in the most recent article (*MMWR* 1986;35:185-8).

†The BLS Annual Survey provides yearly national estimates of incidence rates of occupational illness based on a randomly selected national sample of private-sector U.S. businesses from all industrial classifications. The survey records all new illnesses recognized during the reporting year (incidence) but does not measure continuing conditions from previous years (prevalence).

§Since 1978, the Annual Survey has not tabulated lost workday statistics separately by type of occupational illness.

TABLE 1. Selected examples of occupational dermatologic conditions

Skin disorders	Affected skin structures
Contact dermatitis	Epidermis
Infection	Epidermis and dermis
Trauma	Connective tissue
Cancer	Squamous and basal cells, melanocytes
Vitiligo	Melanocytes
Urticaria	Blood vessels and mast cells
Chloracne	Sebaceous glands

Work-Related Diseases and Injuries — Continued

Because 10%-15% of requests that NIOSH receives for health hazard evaluations involve skin complaints, and because the economic impact of work-related dermatologic conditions is substantial, NIOSH has included dermatologic conditions on its list of 10 leading work-related diseases and injuries in the United States (*7*).

Dermatologic Injuries. Dermatologic injuries are usually described as the immediate adverse effects on skin that result from instantaneous trauma or brief exposure to toxic agents involving a single incident in the work environment (*1*). Skin injuries may constitute 23%-35% of all injuries (*8,9*). Thus, based on 4,748,000 injuries of all types, and a full-time worker population of 74,750,000 for 1983 (*1*), an estimated 1,070,000-1,650,000 dermatologic injuries may occur yearly, with an estimated annual rate of skin injury of 1.4-2.2 per 100 full-time workers. The highest percentage of skin injuries are due to lacerations/punctures (82%), followed by burns (chemical and other) (14%) (*8*) (Table 2).

Other Dermatologic Conditions. Other dermatologic conditions ("illnesses of the skin") may also result from exposure to environmental factors or toxic agents associated with employment. However, they usually result from more sustained or cumulative exposures and involve longer intervals between exposure and occurrence of disease. These conditions include contact dermatitis, infection, acne, and skin cancer. Workers' compensation claims data from California suggest that 95% of these occupational skin conditions are either contact dermatitis (90%) or infections (5%) (*3*). Field investigations in the 1950s showed that at least 80% of occupational contact dermatitis cases may be caused by the irritating direct cytotoxic effects of causal agents rather than immunologically mediated allergic reactions (*10*).

The highest number of other occupational skin conditions (23,017) in 1984 occurred in the manufacturing sector; the highest incidence rate (28.5/10,000 full-time workers) involved the combined agriculture/forestry/fish.ng division (Table 3).

The clinical course for occupational contact dermatitis is relatively poor. In three studies, complete resolution occurred in 25% of workers affected; 50% improved but had periodic recurrences; and 25% developed persistent dermatitis as severe as or worse than the original condition (*11-13*). Contact dermatitis often necessitates job changes or modifications. Despite these, however, complete resolution may occur in only a limited proportion of cases.

Prevention of Work-Related Dermatologic Disorders. The most effective prevention measures are engineering controls that eliminate exposures of the skin to chemical, physical, or mechanical agents through isolation, containment, or redesign of industrial processes. Substitution of less toxic substances through chemical engineering may also be effective (*14*). Protective clothing should be selected on the basis of resistance to both chemical and physical hazards, as well as on the relative permeabilities to specific chemical exposures. Effective

TABLE 2. Occupational dermatologic injuries* — United States, 1983

Type of injury	No.	(%)
Lacerations and punctures	253,141	(82.3)
Burns (nonchemical)	36,477	(11.9)
Abrasions	10,576	(3.4)
Burns (chemical)	6,828	(2.2)
Cold injuries	566	(0.2)
Radiation injuries	135	(0.04)
Total	**307,723**	**(100.0)**

*Reported by the Supplementary Data System of the Bureau of Labor Statistics from 29 participating states.

Work-Related Diseases and Injuries — Continued

cleaning of skin and clothing is important, but workers should not wash vigorously or excessively with harsh soaps and detergents (*15*). Barrier creams have been suggested as alternatives, although their effectiveness has not yet been established (*16*). Prevention strategies should always include education of workers and management.

Expanded activities concerning occupational dermatologic conditions include improved methods for surveillance of occupational skin disease and vigorous research in dermatotoxicology to identify preventable risk factors and facilitate effective interventions at early stages.

Reported by Div of Periodic Surveys and Supplementary Data Systems, Office of Occupational Health and Safety Statistics, Bureau of Labor Statistics, US Dept of Labor; Occupational Dermatology Activity, Industrywide Studies Br, Surveillance Br, Div of Surveillance, Hazard Evaluations, and Field Studies, Data Analysis Section, Div of Safety Research, National Institute for Occupational Safety and Health, CDC.

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TABLE 3. Cases and incidence rate of occupational dermatologic conditions, in a segment of workers, by major industrial divisions — United States, 1984*

Industrial division	No.	Incidence rate†
Agriculture/forestry/fishing	2,233	28.5
Manufacturing	23,017	12.3
Construction	2,456	6.6
Services	7,973	5.0
Transportation/utilities	2,114	4.3
Mining	393	4.0
Wholesale/retail trade	3,770	2.1
Finance/insurance/real estate	563	1.1

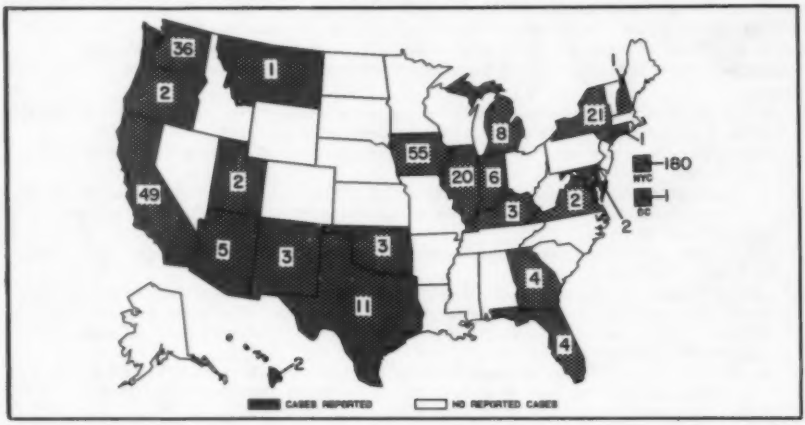
*Bureau of Labor Statistics Annual Survey.

†Per 10,000 full-time workers (2,000 employment hours/full-time worker/year).

Erratum: Vol. 35, No. 33

p. 525 In the article, "Measles—United States, First 26 Weeks, 1986," the percentages in the second sentence of the last paragraph of the editorial note on page 533 are incorrect. The sentence should begin: Since the percentage of preventable cases increased to 35.8% this year from 25.9% in 1985, further improvement . . . .

FIGURE I. Reported measles cases — United States, weeks 31-34, 1986



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